

ABSTRACT OF THE DISCLOSURE

A method and apparatus for using a secondary refrigerant to precool and liquefy a primary refrigerant, then vaporizing and expanding the primary refrigerant to cool a cold tip of a cryosurgical instrument for ablation of biological tissue, such as cardiovascular tissue, in particular endocardiac tissue and tissue inside a cardiac blood vessel. The secondary refrigerant has a critical temperature above the critical temperature of the primary refrigerant, and a cooling temperature below the critical temperature of the primary refrigerant, thereby facilitating the use of the precooling step to provide liquid primary refrigerant in an operating room environment in which the primary refrigerant could not otherwise be provided in the liquid phase.

024A.app